

Movements and Mortality of American White Pelicans Fledged in Three Montana Colonies



Prepared for:

**U.S. Fish and Wildlife Service
Benton Lake National Wildlife Refuge**

Prepared by:

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922 Bootlegger Trail
Great Falls, MT 59404-6133**

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EXECUTIVE SUMMARY

Montana is home to a significant number of breeding American White Pelicans (*Pelecanus erythrorhynchos*), a species of conservation concern with a global population breeding in fewer than 70 colonies. The four breeding colonies in Montana have grown to approximately 10,000 breeding pairs within the last ten years. Banding of juveniles has occurred at each colony at one time or another, yet band return data have never been examined to identify patterns in migratory movements and mortality that may affect management.

We analyzed data for 276 band recoveries of American White Pelican banded as juveniles at three Montana colonies east of the Continental Divide. The majority of non-Montana returns for the Bowdoin colony in far-eastern Montana indicated most pelicans migrated south and east to the Gulf of Mexico and eastern Mexico. Returns for the Canyon Ferry and Arod colonies near the Continental Divide showed a different migratory movement, with the majority of birds crossing the Divide and moving west and south to southern California and western Mexico. We found little evidence for movement of birds between Montana colonies, and only one case of a bird born in one Montana colony attempting to breed in another.

Overall mortality rates ranged from 30% for Canyon Ferry and Bowdoin to 39% for Arod; both Arod and Canyon Ferry had adult mortality rates >35%, which are unusually high for this species. Birds “found dead” of unknown causes accounted for 39.0-53.0% of recoveries from all colonies. Shot birds accounted for 21.7 % of returns for Bowdoin, whereas disease (botulism in particular) was the attributed mortality factor for 47.5 % of Canyon Ferry returns and 34.3 % of Arod Lakes’ returns. The difference in significant mortality factors among the colonies can be attributed largely to differences in years when banding occurred and different colony migration patterns. Over 40% of the recoveries for the Arod and Canyon Ferry colonies were from the Salton Sea of California, which experienced a botulism outbreak in the late 1990’s. Botulism affected all age classes, whereas shooting was more likely to affect juvenile pelicans (first- and second-year birds).

We conclude that there are two relatively distinct colony groupings of breeding pelicans in Montana: one (Canyon Ferry and Arod Lakes colonies) using the Intermountain West and Pacific flyways, and the other (Bowdoin, with the Medicine Lake colony) the Central and Mississippi flyways. However, a coordinated and simultaneous color-marking program at all Montana colonies would better document migratory movements, areas of non-breeding concentration, and the amount of inter-colony dispersal.

Conservation and management of the Montana colonies needs to include consideration of the distinctive flyway affiliations of the colonies and threats to habitat in areas where birds concentrate during the non-breeding season, as well as threats to the individual breeding colonies themselves. A regional perspective is also desirable to coordinate management among colonies demonstrating intermixing of the breeding memberships.